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NOTES AND NEWS

YELLOW JACKETS DISPERSE *Vancouveria* SEEDS (BERBERIDACEAE).—During a field study in Lewis and Clark State Park (WA: Lewis Co.) in early July 1983, I had the opportunity to study seed dispersal in *Vancouveria hexandra* (Hook.) Morr. & Dcne. (inside-out-flower). Observations were made on 3 and 4 July, at which time plants were in all stages, from open flowers to ripe seeds. The common yellow jacket *Vespula vulgaris* (L.) was fairly abundant in the area, and on eight occasions individuals were observed collecting seeds of *V. hexandra.* When an insect searching through an area covered by the plant found a dehisced pod, it alighted on the pod stalk next to it. It then bit loose the seed and its large, white appendage and flew a few meters before alighting on a low branch. It then bit the appendage off within a few seconds and dropped the seed to the ground. The yellow jacket then disappeared carrying the appendage. Apart from the eight successful searches I observed, there were also four occasions when yellow jackets searched in vain for seeds in sterile patches or in patches with unripe pods. Attempts to bite open unripe pods were never observed to be successful. Searches lasted for up to four minutes before the yellow jacket left the study area. The chemical nature of the appendage appears to be unknown, but may possibly consist of polysaccharides.

Berg (Amer. J. Bot. 59:109–122. 1972), in an extensive experimental study, showed that ants are effective seed vectors of *Vancouveria.* In repeated experiments, where seeds were put out within a few meters from nests of ant species in three genera, all seeds were dragged by the appendages to the nests within 0.5–2.5 h.

In contrast to other members of the genus, the pods of *V. hexandra* dehisce while the seeds are still green; this leaves some time before they fall spontaneously to the ground. My observations suggest that this can be an adaptation to allow seed dispersal by vespids. It should result in a more random distribution of the seeds than that provided by ants, which drag them to their nests along their trails. Berg observed ant-mediated transport up to 2.5 m from the starting point. Dispersal by the winged yellow jacket also increases the possibility of dispersal over a somewhat longer range.

To my knowledge, this is the first reported case of seed dispersal by yellow jackets. Vance Tartar (pers. comm.) has observed vespids collecting seeds of *Trillium,* another myrmecochorous genus. Further studies of vespids as seed vectors in ant-dispersed species may prove this phenomenon to be of wider occurrence.

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